Broadband in NYC

New York City's Recommendations for the Broadband Technology Opportunities Program

April 8, 2009

NYC Information Technology & Telecommunications

Diamond Management & Technology Consultants

Executive Summary

- In 2006-2007, New York City conducted a comprehensive broadband study; a primary finding was that broadband **adoption**, not availability, is a key challenge in NYC
- The problem of adoption is not limited to NYC, but is **common to many urban areas** (where more than 60% of the US population resides), and will be the **most pressing national issue going forward**
- In response to the Study findings, NYC crafted a comprehensive broadband program that includes **holistic** initiatives to help citizens overcome **multiple obstacles to adoption**
- The City will employ a **highly coordinated approach** that leverages the most **innovative ideas** and **creates the most jobs** by including all relevant NYC agencies and strong strategic partners
- BTOP funding offers NYC the opportunity to **immediately** execute its programs on a **scale that would otherwise not have been possible**

New York City's broadband programs are directly in line with key BTOP objectives, and can serve as a model for national initiatives

Key BTOP Objectives

1. **Enhance broadband access for** citizens in unserved & **underserved** areas
2. **Provide broadband education, awareness, training, access, equipment and support to:**
   a) Schools, libraries…other community support organizations…to **facilitate greater use of broadband service by or through these organizations**
   b) Organizations and agencies that provide outreach, access, equipment and support **to facilitate greater use of broadband service by low-income, unemployed, aged, and otherwise vulnerable populations**
3. **Stimulate the demand for broadband, economic growth and job creation**

Introduction

- The BTOP clearly makes **adoption** a major priority
- New York City's work on broadband demonstrates in **real terms** why such programs are vital to the broader national goal of universal access
- The City's proposed programs **directly address adoption**, and can serve as **model for adoption-focused efforts across the country**

A primary finding of the Broadband Needs Assessment was that adoption, not service availability, is the major challenge in NYC

Key Findings

1. Broadband for Residents
   Home residential service widely available; low-income residents *adopt* at less than half the rate of middle- and high-income residents

2. Broadband for Businesses
   Large businesses well served; service options may be limited in some industrial/manufacturing areas

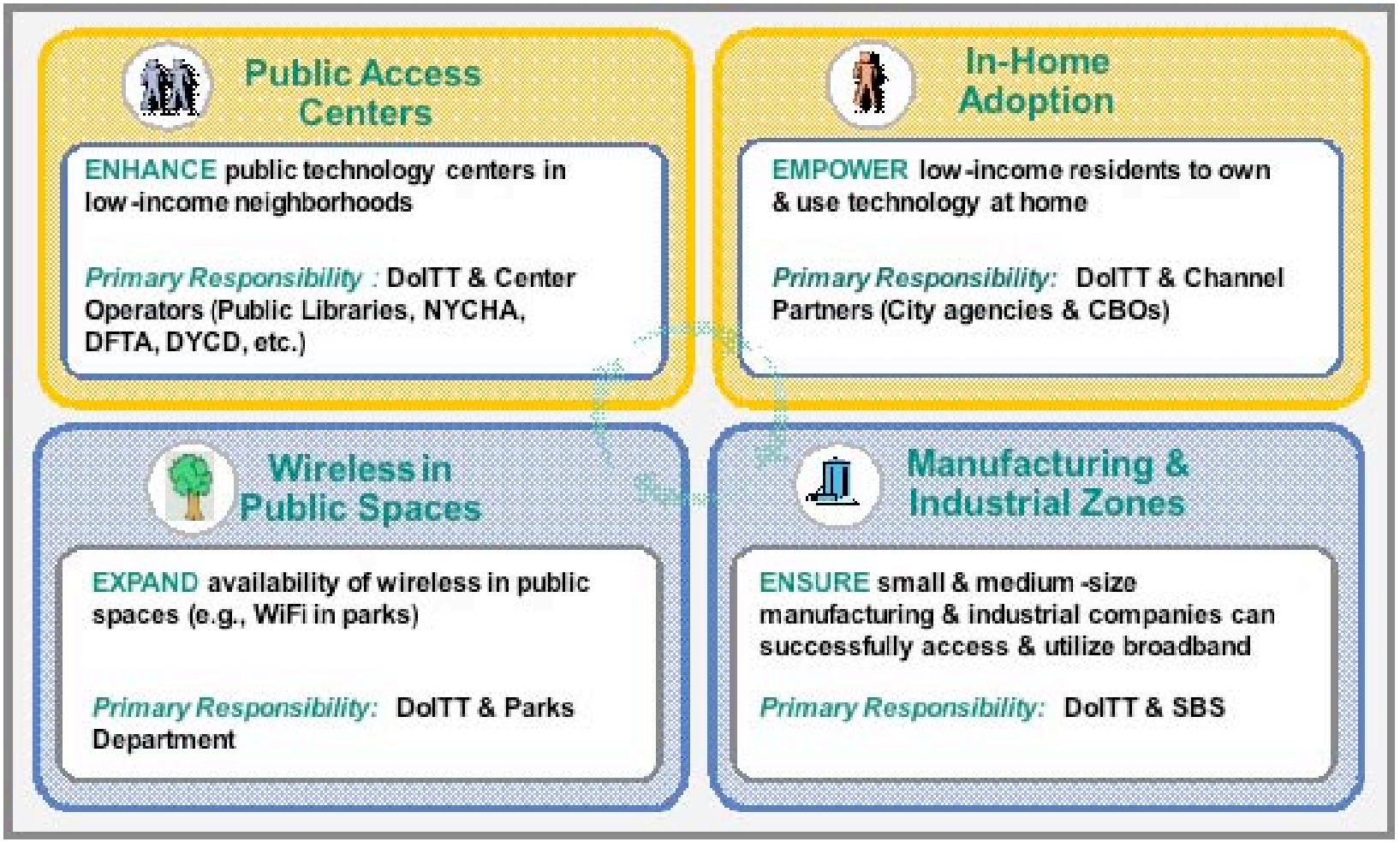
3. Availability of Public Access Centers
   Public technology centers fill critical need, yet many public library branches and City-operated centers in need of connectivity, computers, staff

4. Availability of WiFi in Public Spaces
   NYC well covered by WiFi hotspots, but opportunity to expand coverage in public spaces

5. Competition in the Marketplace
   NYC has above average provider competition, but can continue to enhance through franchise process

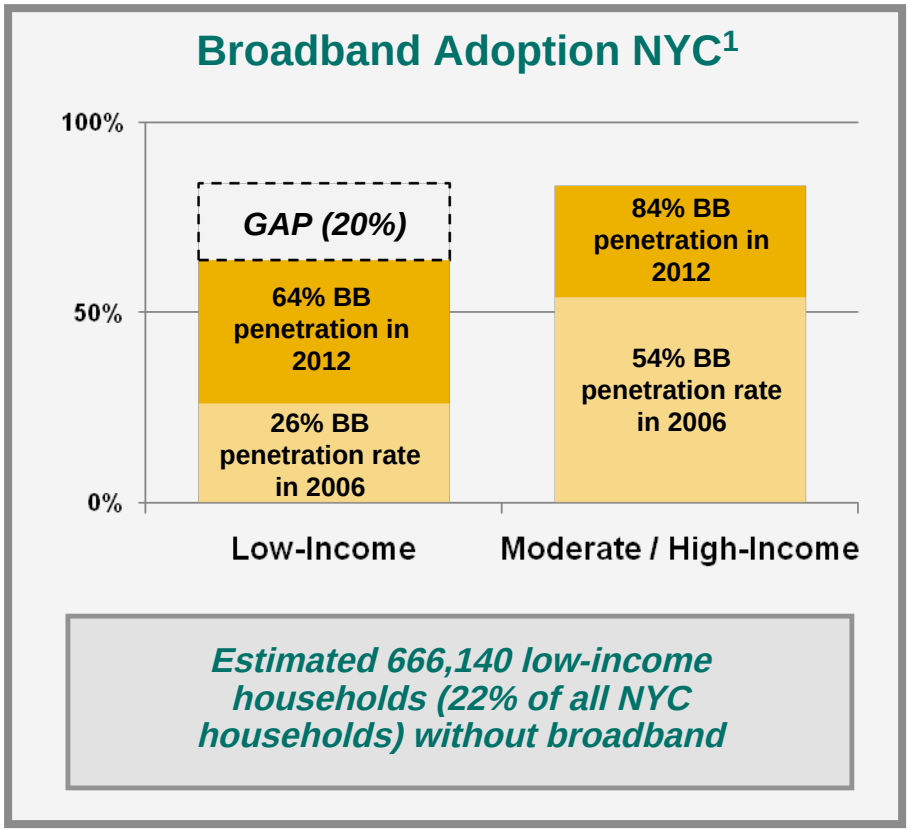
In response to the findings the City crafted a comprehensive broadband strategy

The NYC Digital Inclusion initiative is a comprehensive effort to address the gaps identified in the 2006-7 study



The City plans to request funding to address adoption in NYC

The Broadband Needs Assessment Study identified a growing gap in broadband adoption between low-income and moderate- to high-income New York City residents



Uneven broadband adoption hinders low-income residents and the City

- Lack of digital literacy and connectivity limits low-income residents' access to:
  - Educational resources
  - Employment opportunities
  - Information (health, news, etc.)
  - Social & civic participation
- Connected citizenry prerequisite for the City to provide low cost, efficient online services
- Digitally literate workforce is critical to NYC's ability to attract high growth companies and drive economic prosperity

Sources: [1]American Community Survey 2006, survey of Internet and broadband availability and adoption among NYCHA residents, Scarborough Research, Pew Internet & American Life Project, Diamond analysis.

The proposal will include a holistic approach to address key obstacles to adoption in NYC

Research revealed that low-income residents typically face multiple obstacles to broadband adoption

Obstacle	Research Findings[1]
Lack of computer ownership	• **Lack of computer ownership most commonly cited reason for not having home Internet service *(53% of public library patrons, 83% of NYCHA residents)***
Cost of broadband service	• **Cost of broadband service 2nd most commonly-cited obstacle to having home Internet service among library patrons and NYCHA residents**
Lack of computer literacy skills	• **Only 14% of NYCHA residents without broadband service were satisfied with their computer skills vs. 80% of those with home Internet service**
Failure to recognize value of technology	• **Stakeholder interviews highlight critical need to provide concrete benefits to incent technology adoption**

Sources: [1] NYCHA findings based on Diamond's collection of 1,140 valid survey responses, representing a 95% confidence level and 3% confidence interval. Library findings based on 2,249 survey responses from 58 branches across the five boroughs. Diamond research.

The proposal will include a two-pronged strategy to enhance adoption

NYC's BTOP proposal will build on the two most relevant areas of NYC's broadband program

1. Expanded Public Access

- **Enhance public technology centers in low-income neighborhoods**
  - **Provide connectivity, access devices (desktops/laptops) and staff resources in public places**
  - **Targets include public library branches and City-run facilities, NYCHA, and DFTA centers**

2. Support In-Home Adoption

- **Empower low-income residents to own and use technology at home**
  - **Provide target segments with a technology 'bundle' to spur adoption**
  - **Partner with organizations that have existing citizen touch points to distribute the bundles**

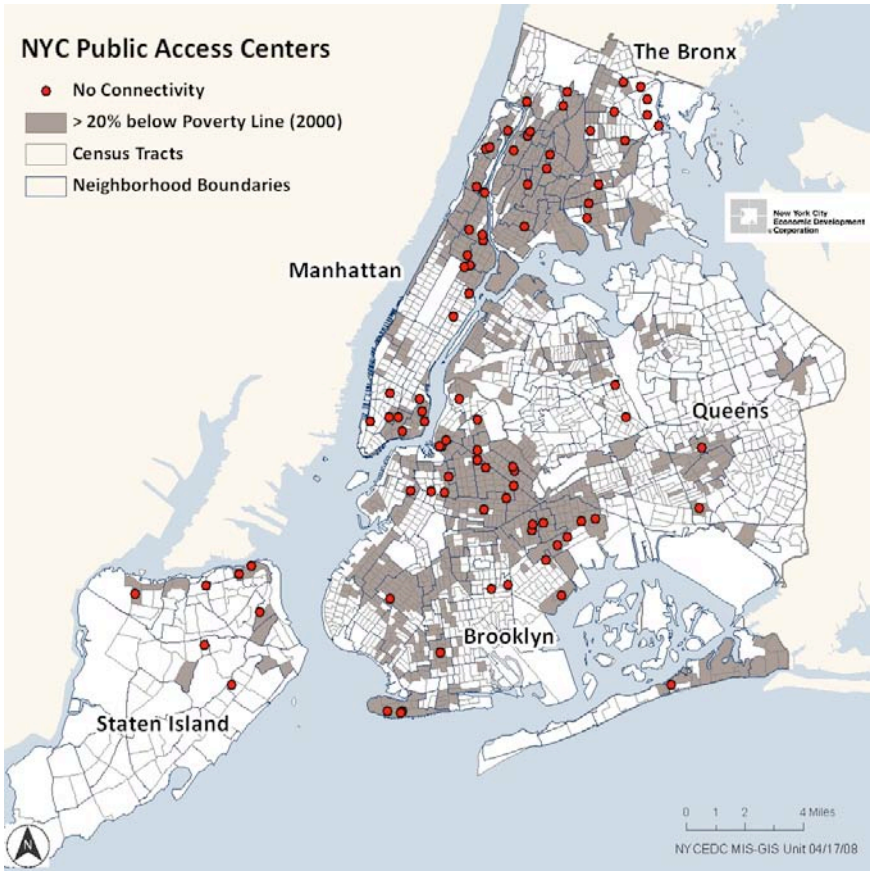
BTOP Strategy 1: Expanded Public Access

The Challenge

- Many public library branches are unable to meet current technology demand with existing resources
- Many City-operated centers, NYCHA and DFTA centers, do not currently have Internet connectivity
- Most are in high-need communities

Initiative: Assist facilities in upgrading connectivity, computers, and expand staff resources, focusing on low income communities to ensure all New Yorkers live within immediate proximity to a public access point

Target Public Access Centers



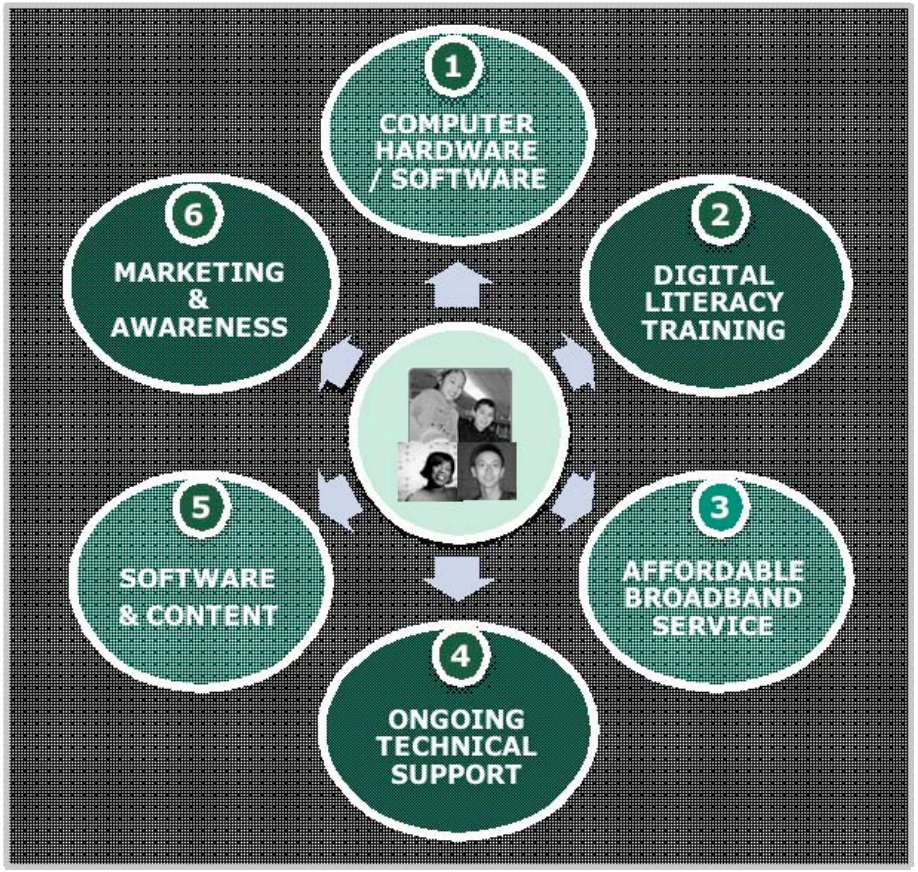
BTOP Strategy 2: In-Home Adoption Support

The Challenge

- Low-income residents often face multiple obstacles to broadband adoption
- Affordability, lack of skills, and limited awareness of benefits of technology are common barriers
- Comprehensive support is needed to help residents overcome fear of technology and recognize benefits of adoption

Initiative: Provide low-income residents with 'technology bundles' that address ALL common obstacles to home broadband adoption

'Technology Bundle' Components



A BTOP program that addresses these issues would best fit NYC's needs and most effectively confront the adoption problem nationally

Issue	Description	Recommendation
1 Adoption not Availability	• Adoption, not availability, is primary problem for NYC and many urban areas (increasingly also for rural areas) • With more than 60% citizens living in urban areas, this is a key national challenge that will intensify going forward	• Place strong emphasis on programs that facilitate adoption and stimulate demand
2 Holistic Approach	• Low-income and other vulnerable groups typically face multiple obstacles to adoption (including affordability, etc.) • A holistic approach that targets these obstacles simultaneously is required to help citizens become long-term, 'active' technology users	• Priority should be given to proposals that put forth holistic programs that address multiple obstacles to broadband adoption • These programs should be tailored to the specific needs of vulnerable citizen segments (e.g., students, unemployed adults, older adults)
3 Sustainability	• NYC believes programs must be sustainable from both citizen and government perspectives • Citizen means empowering people to become active technology users • Government means demonstrating power of broadband to enhance service delivery	• Priority should be given to proposals that ensure sustainability from both citizen and government perspective • This will ensure that social and economic objectives are achieved

Additional recommendations to ensure the success of BTOP projects:

Issue	Description	Recommendation
4 Coordination	• Coalitions of public-private partners will expand the resources, expertise, and innovative thinking available to address these critical issues • Coordination and collaboration is required to ensure efforts are not duplicated or wasted	• Priority should be given to proposals that forge effective coalitions with capable public and private entities • Successful grant applicants should clearly demonstrate planned coordination amongst all relevant groups in specific geographic areas
5 Performance Measurement	• Impact of digital inclusion programs must be carefully monitored and measured • The optimal programmatic approach must first be determined to avoid wasted resource investments and to enhance outcomes	• Priority should be given to targeted 'demonstration' programs that properly evaluate impact and benefits • This approach will provide invaluable lessons learned and best practices for future initiatives across the nation

APPENDIX

Appendix

Broadband Needs Assessment Stakeholder Interviews (1/2)

City Agencies / Organizations

- Brooklyn Public Library
- City Hall
- City University of New York (CUNY)
- Mayor's Office of Comprehensive Neighborhood Economic Development (CNED)
- Metropolitan Transit Authority
- New York City Council
- NYC Center for Economic Opportunity (CEO)
- NYC Dept. for the Aging (DFTA)
- NYC Dept. of City Planning (DCP)
- NYC Dept. of Education (DOE)
- NYC Dept. of Housing Preservation & Development (HPD)
- NYC Dept. of Information Technology & Telecom (DoITT)
- NYC Dept. of Parks & Recreation
- NYC Dept. of Small Business Services (SBS)
- NYC Dept. of Youth & Community Development (DYCD)
- NYC Economic Development Corporation (EDC)
- NYC Housing Authority (NYCHA)
- NYC Law Department
- NYC & Company
- New York Public Library (NYPL)
- Queens Borough Public Library

Service & Technology Providers

- Ambient
- Bway.net
- Cablevision
- Covad Communications
- Crown Castle Solutions Corp.
- Extenet Systems
- Mobilitie
- Nokia Networks
- RCN
- Sprint
- TCC Teleplex
- Telkonet / MST
- Terabeam / Proxim Wireless
- Time Warner Cable
- T-Mobile USA
- Towerstream
- Urban Communications Transport
- Verizon
- Verizon Wireless
- Wi-Fi Salon

Additional Stakeholders

- Alliance for Downtown NY
- Andrew Rasiej (FON, MOUSE)
- Anthony Townsend (Institute for the Future)
- Baruch College School of Public Affairs
- Center for an Urban Future
- Columbia Institute for Tele-Information (CITI)
- Computers for Youth
- Dragonfly Technologies
- Empire City Subway
- Hispanic Information & Telecom Network (HITN)
- Industrial & Technology Assistance Corp. (ITAC)
- Jewish Community Council of Greater Coney Island Non-Profit Help Desk
- Jewish Home and Hospital
- Mount Hope Housing Company
- New York State Public Service Commission (PSC)
- Non-Profit Coordinating Committee of New York
- NPower NY
- NYCwireless
- NYSERNet
- Older Adults Technology Services (OATS)
- Partnership for New York City
- People's Production House (PPH)
- Per Scholas
- Rudin Management Company
- Securities Industry & Financial Markets Association (SIFMA)
- South Bronx Overall Economic Development Corp. (SoBro)
- Wireless Harlem Initiative
- Wolf Block

Appendix

Broadband Needs Assessment Stakeholder Interviews (1/2)

Peer City Representatives

- Berkshire Connect
- Boston Digital Bridge Foundation
- Brookline, MA
- Charlie Kaylor (Connect Kentucky)
- City and County of San Francisco, CA
- City of Boston, MA
- City of Chicago, IL
- City of Grand Rapids, MI
- City of Miami, FL
- City of Philadelphia, PA
- City of Seattle, WA
- Earthlink Municipal Network Division
- Wi-Fi Long Island

Additional Subject Matter Experts

- Angela McIntee (The MITRE Corporation)
- Area Development Magazine
- Blair Levin (Stifel Nicolaus)
- Bonocore Technology Partners
- Business Facility Planning Consultants
- CB Richard Ellis Consulting
- ChicagoFIRST
- Current Technologies
- Ed Malecki (Ohio State University)
- Harris Wiltshire & Grannis
- Intel Corporation
- International Center for Advanced Internet Research (iCAIR)
- Microsoft Corporation
- MSTAR (ISP on Utah's UTOPIA network)
- One Economy
- Rahul Telang (Carnegie Mellon University)
- Regional Partnership Council (aka RPCFIRST)
- Saskia Sassen (Columbia University)
- Sean Gorman (Fortius One)
- Sharon Gillett (Formerly of MIT and the Boston Task Force)
- Tony Grubesic (Indiana University)
- Tropos Networks

Diamond also conducted interviews to gain a better understanding of broadband and digital inclusion initiatives in other cities / regions and consulted numerous subject matter experts.